2007 Annual Index

This instant reference of technical subjects, news and special features from Volume 48 of Sea Technology magazine provides information about feature articles, covers, soapboxes, editorials and authors. This listing will also appear on the Sea Technology Web site in the near future.

Check it out at www.sea-technology.com

JANUARY

Cover—The Diamond Head Lighthouse on the shore of the island of Oahu, Hawaii, as seen from the top of the Diamond Head volcanic crater on a clear August morning. (Photo courtesy of Michele Umansky, *Sea Technology* magazine.)

Editorial—A VIEW FROM OUR READERS—Travis Talent and Michele Umansky

Soapbox—ARE THE OCEANS DYING?—F.J.R. "Max" Taylor

EDITORIAL CONTENTS

2006—A MILESTONE YEAR FOR EARTH OBSERVATIONS
VAdm. Conrad C. Lautenbacher Jr., Under Secretary for Oceans and Atmosphere and Administrator, National Oceanic and Atmospheric Administration

USGS: SCIENCE TO UNDERSTAND AND FORECAST CHANGE IN ECOSYSTEMS
Mark Myers, Director, U.S. Geological Survey

THE SAFE PORT ACT: USING THE LATEST TECHNOLOGY TO SECURE OUR PORTS
Sen. Ted Stevens (R-Alaska), Chairman of the Senate Committee on Commerce, Science and Transportation, U.S. Senate

OCEAN ACTIVITIES IN CLIVAR—RECENT DEVELOPMENTS
Howard Cattle, Director, International CLIVAR Project Office

PROTECTING OUR WATERS TO SECURE OUR NATION
Rep. Frank A. LoBiondo (R-New Jersey), Outgoing Chairman of the House Subcommittee on Coast Guard and Maritime Transportation, U.S. House of Representatives

RESEARCH PLANNING AND REDUCING VULNERABILITIES TO COASTAL HAZARDS
Dr. Leon M. Cammen, Director, National Sea Grant College Program, National Oceanic and Atmospheric Administration

THE STATE OF OUR OCEANS AS THE 110TH CONGRESS GEARS UP
Rep. Sam Farr (D-California), Cochair of the House Oceans Caucus, U.S. House of Representatives

THE YEAR BEHIND AND THE YEAR AHEAD IN BASIC OCEAN RESEARCH
Arden L. Bement Jr., Director, National Science Foundation

NEW OPPORTUNITIES AND CHALLENGES FOR OCEAN SCIENCE RESEARCH
Dr. Steve Bohlen, President, Joint Oceanographic Institutions

INTEGRATED OCEAN OBSERVING SYSTEM DEVELOPMENT IN 2006
Gregg M. Schmidt, Communications and Media Relations Officer, Ocean.US

OCEAN POLICY IN CONGRESS: IN TRANSITION
Rep. Wayne T. Gilchrest (R-Maryland), Chairman of the House Subcommittee on Fisheries and Oceans, U.S. House of Representatives

BATTLESPACE ON DEMAND—A KNOWLEDGE-CENTRIC APPROACH TO NAVAL OCEANOGRAPHY
RAdm. Fred Byus, Oceanographer and Navigator of the Navy, U.S. Navy

LAYING THE FOUNDATION FOR OCEAN POLICY IN 2007
Rep. Vernon J. Ehlers (R-Michigan), Chairman of the Subcommittee on Environment, Technology and Standards, U.S. House of Representatives

EPA'S BOLD MISSION: MONITORING OCEANS AND COASTS WITH A NEW SHIP
Benjamin H. Grumbles, Assistant Administrator, Office of Water, Environmental Protection Agency

HIGH ENERGY PRICES, ATTRACTIVE DRILLING PROSPECTS FUEL STRONG U.S. GULF IN 2007
Susanne Pagano, Houston, Texas

JAPAN—AN INTENSIVE DISCUSSION BEING HELD ON OCEAN POLICY
Hiroyuki Nakahara, Managing Director, Research for Ocean Economics, Japan

FISHERIES & AQUACULTURE: COURSE OF LEGISLATION UNCLEAR IN NEW CONGRESS
Rick Martin, Publisher, Commercial Fisheries News and Fish Farming News

FIRING LINE REPORT: OIL RICH IN 2007?
Michele Umansky, Managing Editor

MARINE ENVIRONMENTAL MONITORING TECHNOLOGY IN CHINA
Yan-bo Gao and De-wen Ding (Dalian Maritime University) take a look at the supports and needs in the advancements of marine monitoring technology for the past decade.

***SEA TECHNOLOGY* READER SURVEY**

FEBRUARY

Cover—The excitation laser of the Deep-Ocean Raman *In-Situ* Spectrometer (DORISS2) focused on a barite mound in Monterey Bay, off California. The spectrometer was supplied by Kaiser Optical Systems Inc. (Ann Arbor, Michigan). The mound is inhabited by some colorful Brisingida. The photo was taken using a mounted still camera (Coolpix 990) on the remotely operated vehicle Tiburon.

Editorial—CONNECTING THE DOTS FOR THE SUSTAINABLE USE OF OCEAN RESOURCES—Peter J. Auster

Soapbox—INNOVATION: SCIENCE, ART AND DESIGN—Kevin Hardy

EDITORIAL CONTENTS

TWO GENERATIONS OF DEEP-OCEAN RAMAN *IN-SITU* SPECTROMETERS
Alana D. Sherman, Peter M. Walz and Peter G. Brewer (Monterey Bay Aquarium Research Institute) explore lessons learned while optimizing instrument robustness and sensitivity.

CONNECTING INSTRUMENTS TO NEPTUNE CANADA
Paul Hansen and Peter Phibbs (University of Victoria) examine instrument connections to subsea interfaces on a scientific cabled ocean observatory.

COORDINATION OF GLOBAL OCEAN OBSERVATORIES
Boram Lee (Intergovernmental Oceanographic Commission, United Nations Educational, Scientific and Cultural Organization) discusses the joint WMO/IOC technical commission for oceanography and marine meteorology and OceanSITES.

ACOUSTICS IN GLOBAL PROCESS OCEAN OBSERVATORIES
Timothy F. Duda (Woods Hole Oceanographic Institution), Bruce M. Howe (University of Washington) and James H. Miller (University of Rhode Island) describe how they are working to advance climate, biological, geological and biogeochemical studies.

MEASURING OCEAN WAVES AND CURRENTS IN DEEPWATER
Jon D. Wood (Ocean Data Technologies Inc.) and Dr. Eugene A. Terray (Woods Hole Oceanographic Institution) show how subsurface moorings offer a simple approach to obtaining critical information to support offshore operations.

OCEAN BUSINESS 2007
—Conference Preview

MULTISCALE MAP DENOISING OF SAR AND SAS IMAGES
Alexandru Isar, Dorina Isar (Politehnica University) and Andre Quinquis (Ecole Nationale Supérieure des Ingénieurs des Etudes et Techniques d'Armement) review how to denoise terrestrial and underwater images using statistics in the wavelets domain.

MARCH

Cover—Port of New Orleans watchstanders at the U.S. Coast Guard Vessel Traffic Service use Lockheed Martin's MTM-200 Vessel Traffic Management and Information System to monitor the more than 6,000 vessels that move through the Mississippi River corridor annually. The MTM-200 supports various maritime safety and security initiatives and builds maritime domain awareness of activities in the country's fifth busiest port area.

2007 Annual Index

This instant reference of technical subjects, news and special features from Volume 48 of Sea Technology magazine provides information about feature articles, covers, soapboxes, editorials and authors. This listing will also appear on the Sea Technology Web site in the near future.

Check it out at www.sea-technology.com

JANUARY

Cover—The Diamond Head Lighthouse on the shore of the island of Oahu, Hawaii, as seen from the top of the Diamond Head volcanic crater on a clear August morning. (Photo courtesy of Michele Umansky, *Sea Technology* magazine.)

Editorial—A VIEW FROM OUR READERS—Travis Talent and Michele Umansky

Soapbox—ARE THE OCEANS DYING?—F.J.R. "Max" Taylor

EDITORIAL CONTENTS

2006—A MILESTONE YEAR FOR EARTH OBSERVATIONS
VAdm. Conrad C. Lautenbacher Jr., Under Secretary for Oceans and Atmosphere and Administrator, National Oceanic and Atmospheric Administration

USGS: SCIENCE TO UNDERSTAND AND FORECAST CHANGE IN ECOSYSTEMS
Mark Myers, Director, U.S. Geological Survey

THE SAFE PORT ACT: USING THE LATEST TECHNOLOGY TO SECURE OUR PORTS
Sen. Ted Stevens (R-Alaska), Chairman of the Senate Committee on Commerce, Science and Transportation, U.S. Senate

OCEAN ACTIVITIES IN CLIVAR—RECENT DEVELOPMENTS
Howard Cattle, Director, International CLIVAR Project Office

PROTECTING OUR WATERS TO SECURE OUR NATION
Rep. Frank A. LoBiondo (R-New Jersey), Outgoing Chairman of the House Subcommittee on Coast Guard and Maritime Transportation, U.S. House of Representatives

RESEARCH PLANNING AND REDUCING VULNERABILITIES TO COASTAL HAZARDS
Dr. Leon M. Cammen, Director, National Sea Grant College Program, National Oceanic and Atmospheric Administration

THE STATE OF OUR OCEANS AS THE 110TH CONGRESS GEARS UP
Rep. Sam Farr (D-California), Cochair of the House Oceans Caucus, U.S. House of Representatives

THE YEAR BEHIND AND THE YEAR AHEAD IN BASIC OCEAN RESEARCH
Arden L. Bement Jr., Director, National Science Foundation

NEW OPPORTUNITIES AND CHALLENGES FOR OCEAN SCIENCE RESEARCH
Dr. Steve Bohlen, President, Joint Oceanographic Institutions

INTEGRATED OCEAN OBSERVING SYSTEM DEVELOPMENT IN 2006
Gregg M. Schmidt, Communications and Media Relations Officer, Ocean.US

OCEAN POLICY IN CONGRESS: IN TRANSITION
Rep. Wayne T. Gilchrest (R-Maryland), Chairman of the House Subcommittee on Fisheries and Oceans, U.S. House of Representatives

BATTLESPACE ON DEMAND—A KNOWLEDGE-CENTRIC APPROACH TO NAVAL OCEANOGRAPHY
RAdm. Fred Byus, Oceanographer and Navigator of the Navy, U.S. Navy

LAYING THE FOUNDATION FOR OCEAN POLICY IN 2007
Rep. Vernon J. Ehlers (R-Michigan), Chairman of the Subcommittee on Environment, Technology and Standards, U.S. House of Representatives

EPA'S BOLD MISSION: MONITORING OCEANS AND COASTS WITH A NEW SHIP
Benjamin H. Grumbles, Assistant Administrator, Office of Water, Environmental Protection Agency

HIGH ENERGY PRICES, ATTRACTIVE DRILLING PROSPECTS FUEL STRONG U.S. GULF IN 2007
Susanne Pagano, Houston, Texas

JAPAN—AN INTENSIVE DISCUSSION BEING HELD ON OCEAN POLICY
Hiroyuki Nakahara, Managing Director, Research for Ocean Economics, Japan

FISHERIES & AQUACULTURE: COURSE OF LEGISLATION UNCLEAR IN NEW CONGRESS
Rick Martin, Publisher, Commercial Fisheries News and Fish Farming News

FIRING LINE REPORT: OIL RICH IN 2007?
Michele Umansky, Managing Editor

MARINE ENVIRONMENTAL MONITORING TECHNOLOGY IN CHINA
Yan-bo Gao and De-wen Ding (Dalian Maritime University) take a look at the supports and needs in the advancements of marine monitoring technology for the past decade.

***SEA TECHNOLOGY* READER SURVEY**

FEBRUARY

Cover—The excitation laser of the Deep-Ocean Raman *In-Situ* Spectrometer (DORISS2) focused on a barite mound in Monterey Bay, off California. The spectrometer was supplied by Kaiser Optical Systems Inc. (Ann Arbor, Michigan). The mound is inhabited by some colorful Brisingida. The photo was taken using a mounted still camera (Coolpix 990) on the remotely operated vehicle Tiburon.

Editorial—CONNECTING THE DOTS FOR THE SUSTAINABLE USE OF OCEAN RESOURCES—Peter J. Auster

Soapbox—INNOVATION: SCIENCE, ART AND DESIGN—Kevin Hardy

EDITORIAL CONTENTS

TWO GENERATIONS OF DEEP-OCEAN RAMAN *IN-SITU* SPECTROMETERS
Alana D. Sherman, Peter M. Walz and Peter G. Brewer (Monterey Bay Aquarium Research Institute) explore lessons learned while optimizing instrument robustness and sensitivity.

CONNECTING INSTRUMENTS TO NEPTUNE CANADA
Paul Hansen and Peter Phibbs (University of Victoria) examine instrument connections to subsea interfaces on a scientific cabled ocean observatory.

COORDINATION OF GLOBAL OCEAN OBSERVATORIES
Boram Lee (Intergovernmental Oceanographic Commission, United Nations Educational, Scientific and Cultural Organization) discusses the joint WMO/IOC technical commission for oceanography and marine meteorology and OceanSITES.

ACOUSTICS IN GLOBAL PROCESS OCEAN OBSERVATORIES
Timothy F. Duda (Woods Hole Oceanographic Institution), Bruce M. Howe (University of Washington) and James H. Miller (University of Rhode Island) describe how they are working to advance climate, biological, geological and biogeochemical studies.

MEASURING OCEAN WAVES AND CURRENTS IN DEEPWATER
Jon D. Wood (Ocean Data Technologies Inc.) and Dr. Eugene A. Terray (Woods Hole Oceanographic Institution) show how subsurface moorings offer a simple approach to obtaining critical information to support offshore operations.

OCEAN BUSINESS 2007
—Conference Preview

MULTISCALE MAP DENOISING OF SAR AND SAS IMAGES
Alexandru Isar, Dorina Isar (Politehnica University) and Andre Quinquis (Ecole Nationale Supérieure des Ingénieurs des Etudes et Techniques d'Armement) review how to denoise terrestrial and underwater images using statistics in the wavelets domain.

MARCH

Cover—Port of New Orleans watchstanders at the U.S. Coast Guard Vessel Traffic Service use Lockheed Martin's MTM-200 Vessel Traffic Management and Information System to monitor the more than 6,000 vessels that move through the Mississippi River corridor annually. The MTM-200 supports various maritime safety and security initiatives and builds maritime domain awareness of activities in the country's fifth busiest port area.

Editorial—EARLY EXPOSURE KEY TO MARINE SCIENCE CAREERS—Larry Nordell

Soapbox—MURKOWSKI MISFIRES ON AQUACULTURE—John Sackton

EDITORIAL CONTENTS

AN OPERATIONAL, REAL-TIME, LARGE-SCALE VISUAL MOSAICKING AND NAVIGATION SYSTEM

Kristof Richmond and Stephen Rock explore a mosaicking and navigation system developed by the Stanford Robotics Lab and Monterey Bay Aquarium Research Institute.

IMPROVED AUV NAVIGATION THROUGH MULTISENSOR DATA FUSION

Paul Rigby, Dr. Oscar Pizarro and Dr. Stefan Williams prove a combined Doppler and acoustic navigation system can provide drift-free georeferenced positioning.

TEST AND EVALUATION OF INTERFEROMETRIC SONAR TECHNOLOGY

Caleb Gostnell and L.T. Yoos work to phase differencing bathymetric sonar into tools used for nautical charting hydrography survey.

A MEETING OF THE MINDS: SUBOPTIC 2007

—Conference Report

INTERDISCIPLINARY OCEAN SENSOR TECHNOLOGY DEVELOPMENT

Frank Spada, Derek V. Manov and Dr. Grace Chang look at sensor development for long-term environmental monitoring systems.

TSUNAMI MONITORING SYSTEM: IMPLEMENTING GLOBAL REAL-TIME DATA TELEMETRY

Simon Holgate and Jeff Pugh introduce the need for real-time sea level data from anywhere.

THE TOWED TORPEDO EMULATOR

Dr. Mark Trevorrow, David Smart and Save De Belie research a tool for testing and training surface-ship torpedo defense systems.

APRIL

Cover—GlobalSantaFe's semisubmersible GSF Development Driller I is contracted to drill in the Gulf of Mexico. The rig is rated to drill in 7,500 feet of water. The semi is designed to drill to a depth of 37,500 feet. (This photo is a courtesy of GlobalSantaFe, which is headquartered in Houston, Texas.)

Editorial—A Renaissance in Ocean Science—Leon E. Panetta and James D. Watkins

Soapbox—LOOKING TO STATES FOR LEADERSHIP—Dr. Andrew Clark

EDITORIAL CONTENTS

COMBINATION OF EXTREME WIND SPEED AND WAVE HEIGHT FOR OFFSHORE STRUCTURE DESIGN

Sheng Dong explains the design parameter estimation of environmental conditions in Bohai Bay.

SEA CON'S NEW CABLE TERMINATION SYSTEM/RUFF-NEK CONNECTOR ENABLES RELIABLE DEEPWATER DRILLING

Michael Mulcahy shows how close OEM/customer communication facilitates partnerships.

DEEPWATER DRILLING USING A PASSIVE COMPENSATOR

Jan Hatleskog and Matthew W. Dunnigan tell how moderate heave conditions illustrate both load variation and contact instability.

OTC 2007 SHOWCASES TRENDS AND TECHNOLOGY THAT ARE 'TRANSFORMING THE INDUSTRY'

—Conference Report

RECENT DEVELOPMENTS IN ARCTIC ESCAPE, EVACUATION AND RESCUE

Frank Bercha overviews recent and emerging advancements in Arctic offshore escape, evacuation and rescue.

U.S. HYDRO 2007 USHERS IN THE THIRD CENTURY OF HYDROGRAPHIC SURVEYING IN THE UNITED STATES

—Conference Report

OIL SPILL DETECTION SYSTEM BASED ON MARINE X-BAND RADAR

Cathrine Egset and Elisabeth Nøst explain a verified system for automatic detection and real-time presentation of position, extent and drift of oil spills.

DEEPWATER EXPLORATION, FIELD DEVELOPMENT DRIVE STRONG GULF OF MEXICO MARKET

Susanne Pagano forecasts the offshore industry for 2007 and beyond.

AUTOMATIC POSITIONING OF AN ROV FOR SERVICING OF TETHERED OCEAN MOORINGS

Aaron Plotnik and Stephen Rock show how an ROV can be hovered automatically with respect to a moving moored platform, while a single pilot performs servicing tasks.

MAY

Cover—The U.S. Coast Guard cutter *Polar Sea* during a break-in period at the U.S. base at McMurdo Station in the Ross Sea, Antarctica, with orca, skua and Mount Erebus in the background. (Photo courtesy of U.S. Coast Guard officer Lt.Cmdr. Don Peltonen.)

Editorial—UNDERWATER COMMUNICATIONS AND DATA PROCESSING CHALLENGES—James Preisig

Soapbox—TURNING OCEAN LEMONS INTO LEMONADE—Ben Korgen

EDITORIAL CONTENTS

WIRELESS COMMUNICATIONS ADVANCES FOR MARITIME USE

Dr. Phil McGillivary (U.S. Coast Guard Pacific Area), Kevin Fall (Intel Research Berkeley) and Andrew Maffei (Woods Hole Oceanographic Institution) explore the applications of new protocols for delay and disruption-tolerant networking.

DATA MANAGEMENT ISSUES IN OPERATIONAL OCEAN OBSERVATORIES

Kevin J. Gomes, John Graybeal and Thomas C. O'Reilly (Monterey Bay Aquarium Research Institute) reveal the important lessons learned during the design, construction and operation of an ocean observatory in Monterey Bay.

OCEANS 2007 IEEE/OES

—Conference Preview

COMMUNICATIONS TECHNOLOGY THAT CAN WEATHER ANY STORM

Dr. Qian Zhong (Tyco Telecommunications) explains the impact of optical add/drop multiplexing technology on the offshore community.

PACIFIC CONGRESS ON MARINE SCIENCE AND TECHNOLOGY 2007

—Conference Preview

OPTO-ACOUSTIC DOWNLINK UNDERWATER COMMUNICATION

Dr. Fletcher Blackmon and Dr. Lynn T. Antonelli (Naval Undersea Warfare Center) analyze remote, aerial translayer communication.

UNDERSEA DEFENCE TECHNOLOGY EUROPE 2007

—Conference Preview

FISCAL YEAR 2008 BUDGET OF THE UNITED STATES GOVERNMENT

Richard F. Burns (Associate Editor) outlines the fiscal year 2008 budget for the Department of Defense and U.S. Navy.

INTERNAL WAVE PROPAGATION OBSERVED BY SHIPBOARD RADAR

Dr. Dong-Jiing Doong, Li-Chung Wu and Dr. Chia Chuen Kao (National Cheng Kung University) research how an extra function of marine radar can be used as ocean observation equipment.

MODELING COMMUNICATION CHANNELS AT OCEAN BASIN SCALES

John L. Spiesberger (University of Pennsylvania) finds that the numerical models of low-frequency sound in the Pacific Ocean yield coherence times in agreement with observations.

JUNE

Cover—The first test of the Dual Head 7125 system on a flexible eight-inch water injection flowline. The outer sheath of the pipe consists of medium-density polyethylene with inner carbon steel armor. The test was conducted in a harbor in Denmark using a small vessel with the sonar system 5.5 meters above the pipeline and the two sonar heads separated by three meters. (Photo courtesy of RESON.)

Editorial—SOUNDING DIRECTIONS—David Goodfellow

Soapbox—HOW LONG WILL WE RESIST OCEAN ZONING? AND WHY?—Dr. Tundi Agardy

EDITORIAL CONTENTS

PROGRESS IN THE DEVELOPMENT OF SHALLOW-WATER MAPPING SYSTEMS

Emile Bergeron, Charles R. Worley and Thomas O'Brien (Woods Hole Science Center, U.S. Geological Survey) explore using an autonomous surface vehicle for shallow-water geophysical studies.

DESIGN OF THE RESEARCH VESSEL *HUGH R. SHARP*

David J. Bonney (Bay Marine Inc.) and Michael Bahtiarian (Noise Control Engineering) outline the design of a coastal oceanographic research vessel with a low radiated noise signature.

SHIP HULL INSPECTION WITH THE HAUV

Dr. Jerome Vaganay (Bluefin Robotics Corp.) and Dr. Franz Hover (Massachusetts Institute of Technology) reveal U.S. Navy HULSFest and NATO Harbour Protection Trials demonstration results.

NATIONAL OCEAN INDUSTRIES ASSOCIATION ANNUAL MEETING

—Conference Report

IMPROVED SHIP CLASSIFICATION IN LITTORALS THROUGH SENSOR FUSION

David Lindgren, Ron K. Lennartsson and Leif Persson (Swedish Defence Research Agency) document a combined hydroacoustic and electromagnetic surveillance system that provides robust performance in

difficult environments.

MULTICARRIER WIDEBAND ACOUSTIC COMMUNICATIONS

Milica Stojanovic (Massachusetts Institute of Technology) shows how OFDM offers a viable approach to high-rate, low-complexity wireless underwater communications.

APERTURE SYNTHESIS AND COGNITION COMBINED IN A MARITIME VEHICLE

Anthony Matthews (Naval Surface Warfare Center, Panama City) discusses the advent of a real-time synthetic aperture sonar with cognitive alertment in an autonomous distributed network.

JULY

Cover—The ODIM LARS™ launch and recovery system is an automated handling solution for remotely operated vehicles in water depths down to 4,000 meters. (Photo courtesy of Tony Hall.)

Editorial—REDUCED-RISK OPERATIONS WITH MODU MOORING—Evan H. Zimmerman

Soapbox—THE VIEW FROM MOONSHINE HILL—Peter W. Marshall

EDITORIAL CONTENTS

LARGE SYNTHETIC FIBER ROPES FOR MARINE APPLICATIONS

Peter Davies, Bertrand Forest and Nicolas Lacotte (French Ocean Research Institute) evaluate twisting and bending effects for deep-ocean mooring and handling.

ROBUST, PRESSURE-TOLERANT LITHIUM BATTERY FOR UNDERWATER USE

Dr. Richard A. Wilson (Bluefin Robotics Corp.) and Dr. James W. Bales (Massachusetts Institute of Technology) explain how careful design and extensive testing lead to a safe, reliable, high-density energy solution for deep or shallow waters.

BALTIC OBSERVATORY FOR OCEANOGRAPHIC MONITORING

Volker Karpen, Thomas Viergutz and Laurenz Thomsen (Jacobs University) explore the applications of a shallow cabled observatory with near-real-time data transfer based on deep-sea standards.

SUCCESSFUL USE OF A FIBER ROPE DEPLOYMENT SYSTEM

Per Ingeberg, Sverre Torben (ODIM Alitec) and Sam Bull (The Cortland Companies) examine a technology proven through a comprehensive ultra-deepwater installation program in the Gulf of Mexico.

SOUTH BAY CABLE: CELEBRATING A GOLDEN ANNIVERSARY

—Company Profile

DURABILITY OF POLYESTER DEEPWATER MOORING LINES

Chris Berryman, Stephen J. Banfield and John F. Flory (Tension Technology International) show how, through superior polyester fatigue life to chain and wire, axial compression, creep and hysteresis are no longer concerns.

DEVELOPMENT OF A NEW LASER-BEAM WELDING TECHNIQUE

Huseyin Ozden and K. Turgut Gursel (Ege University) compare a new technique and its application in the building of ships and marine structures to conventional welding methods.

MAGNETIC GRADIOMETER FOR UUV-BASED BURIED MINE HUNTING

Sankaran Kumar (General Electric Security), Glenn Sulzberger and Ted Clem (Naval Surface Warfare Center, Panama City) discuss the demonstration of a real-time tracking magnetic gradiometer in target field sea tests in the Gulf of Mexico.

AUV-BASED CHEMICAL PLUME TRACING

Shuo Pang (Embry-Riddle Aeronautical University), Jay A. Farrell (University of California) and Wei Li (California State University) talk about tracing development and demonstration in near-shore ocean conditions.

AUGUST

Cover—Designed to operate like a manta ray, the human-powered Bogus Batoid is lowered into the water in the Ninth International Submarine Races at the Naval Surface Warfare Center's Carderock facility. The sub was created by engineering entrepreneur Bruce Plazyk of Wheaton, Illinois, and his son Martin, a student at Georgia Tech. (Photo courtesy of Leo Abernethy.)

Editorial—NEW TOOLS FOR COASTAL ZONE DEVELOPMENT, EXPLORATION AND MANAGEMENT—Oscar Schofield and Scott Glenn

Soapbox—OCEANS 2025 IN THE UNITED KINGDOM—John Humphrey

EDITORIAL CONTENTS

PREDICTING THE NEXT STORM SURGE FLOOD

Barry Stamey (Noblis Inc.), Harry Wang (College of William & Mary) and Michael Koterba (U.S. Geological Survey) evaluate the rapid prototype development of a regional capability used to address a national problem.

INSTRUMENTATION FOR INVESTIGATING SUBMARINE CANYONS

Larry E. Bird, Charles K. Paull and Brett W. Hobson (Monterey Bay Aquarium Research Institute) explain the development of a self-triggering event detector used to investigate sediment transport events.

OPEN-OCEAN AQUACULTURE ENGINEERING

Dr. Barbaros Celikkol and Dr. Richard Langan (University of New Hampshire) explore how, as the demand for fish increases, aquaculture goes offshore searching for sustainability.

UNDERWATER APPLICATION OF HIGH-POWER LIGHT-EMITTING DIODES

Mark Olsson, Kevin Hardy and John Sanderson (DeepSea Power & Light) tell how a solid-state light comes of age in the deep sea as high-power LEDs debut on submersible Alvin dives.

OCEANS 2007 MTS/IEEE VANCOUVER CONFERENCE AND EXHIBITION

—Conference Preview

NATIONAL OCEAN SCIENCES BOWL: MORE THAN A COMPETITION

Susan Haynes, Courtney Bogle and Dr. Susan Cook (Consortium for Oceanographic Research and Education) highlight a high school ocean science competition celebrating 10 years of academic excellence.

A LOW-COST DEEPWATER ACOUSTIC SENSOR FOR LOW FREQUENCIES

Christopher S. Taggart, Dennis P. Dyer and James A. Cindric (General Dynamics Advanced Information Systems Inc.) discuss overcoming design and manufacturing challenges to sensor performance and affordability in the five to 1,200-hertz range.

SEPTEMBER

Cover—The predicted offshore transport of Tijuana River plume water modeled using high-frequency radar measurements of surface currents in the San Diego, California, region. The inlay shows debris within the Tijuana River during non-flood conditions. More than 90 high-frequency radar sites are in use around the coastal United States. They are networked by a joint effort between the Scripps Institution of Oceanography and the National Oceanic and Atmospheric Administration to develop a high-frequency radar data management system for the Integrated Ocean Observing System. (Photo courtesy of J. Matthews, M. Otero and S. Kim.)

Editorial—DON'T OVERLOOK THE SAMPLE DATA—Paul Dragos

Soapbox—INTERNATIONAL SUBMARINE RACES INSPIRE OUR YOUTH—Nancy R. Hussey

EDITORIAL CONTENTS

KEEPING CONSTANT WATCH ON HARMFUL ALGAL BLOOMS

Robert M. Ellison (YSI Inc.) and Brian Bendis (AMJ Environmental) use a pontoon-mounted autonomous monitoring system in Florida waters.

PARTICULATE SCATTERING IN COASTAL WATERS: CHESAPEAKE BAY STUDY

Dr. Alexander Gilerson, Dr. Jing Zhou and Rodolfo Fortich (The City College of the City University of New York) study the impact of scattering characteristics on reflectance spectra and the accuracy of algorithms.

DE-OILING OF PRODUCED WATER FROM OFFSHORE OIL PLATFORMS

M.J. Plebon, Marc A. Saad and Xue Jun "Arthur" Chen (TORR Canada Inc.) look at the recent commercialized technology that combines adsorption, coalescence and gravity separation into one process.

NAVY-ENGINEERED TECHNOLOGY PROVES ITSELF AT SUPERFUND SITE

Suzanne Finch (Center for Commercialization of Advanced Technology) explains a remediation system engineered by the U.S. Navy that saves time and money while cleaning up toxic waste.

NINTH INTERNATIONAL SUBMARINE RACES

John Hussey reports on how speed and innovations in propulsion were the highlights of this year's design competition.

MAPPING SURFACE CURRENTS AROUND U.S. COASTS

Dr. Eric J. Terrill, Mark Otero and Lisa Hazard (Scripps Institution of Oceanography) discuss a network of high-frequency radar for the Integrated Ocean Observing Network.

ENVIRONMENTAL PREDICTION, PATH PLANNING AND ADAPTIVE SAMPLING

Pierre F.J. Lermusiaux, Patrick J. Haley Jr. (Massachusetts Institute of Technology) and Namik Yilmaz (freelance engineer) expound on sensing and modeling for efficient ocean monitoring, management and pollution control.

GLUCOS: THE GREAT LAKES URBAN

COASTAL OBSERVING SYSTEM
Thomas R. Consi, Thomas F. Hansen and J. Val Klump (University of Wisconsin, Milwaukee) implement a radio-linked buoy network for the real-time monitoring of water quality in an urban freshwater coastal zone.
HIGH-RESOLUTION IMAGING OF CURRENT FIELDS FROM SATELLITES
Roland Romeiser (University of Hamburg) shows how the latest radar technology permits current measurements in coastal waters and rivers at sub-kilometer resolution.

OCTOBER

Cover—RESON (Slangerup, Denmark) 8101 and 7125 multibeam echo sounder imagery colored by depth of the Tertiary rocks folded along the San Gregorio Fault and eroded by wave activity off Pillar Point in Half Moon Bay, California (background National Oceanic and Atmospheric Administration Chart 18682, soundings in feet). (Photo courtesy of California State University, Monterey Bay; Seafloor Mapping Lab; and Fugro Pelagos Inc. for the North Central Coast Mapping Project, funded by the California Coastal Conservancy and the Ocean Protection Council.)
Editorial—THE SONAR DEBATE: BREAKING THROUGH THE NOISE—RAdm. Dick West
Soapbox—HIGH TIME TO REVIVE THE PRECAUTIONARY PRINCIPLE IN OCEAN EXPLORATION—Rick MacPherson

EDITORIAL CONTENTS

ACOUSTIC DOPPLER VELOCIMETERS OFFER CLUES TO WAVE BEHAVIOR
Freelance writer Steve Werblow explains how researchers Steve Elgar and Britt Raubenheimer used ADVs to gain new insight on deflection and diffraction caused by complex bathymetry.
A FIBER OPTIC DISTRIBUTED-TEMPERATURE SENSOR SYSTEM
Robert Brehm (RBR Europe GmbH) and Frank Johnson (RBR Ltd.) investigate a sensor system used for the measurement of temperature distribution in fiber optic cable based on light backscattering.
THE AEROVIRONMENT NAF: GOING UNDER THE WAVE FOR OCEAN POWER
Thomas Zambrano, Tyler MacCready and Eric Edwards (AeroVironment Inc.) show how sea experiments provide a way forward for power take-off development.
APPLYING INTENTIONALITY TO AUV COMMUNICATION
Kaylani Merrill, Dr. Michael O'Rourke and Dr. Dean B. Edwards (University of Idaho) apply a framework for organizing acoustic exchanges based on the Speech Act Theory and the pragmatics of natural language.
SEA-ICE FORECASTING IMPROVEMENT IN THE SOUTHERN OKHOTSK SEA
Hajime Yamaguchi and Ayumi Fujisaki (University of Tokyo) explore the effects of model reformation, grid-size reduction and new sea-surface current data on the accuracy of ice forecasting.
TRIPOD FOUNDATIONS FOR OFFSHORE WIND-ENERGY CONVERTERS
Dr. Stefan Herion (University of Karlsruhe) and Dr. Holger Huhn (Fraunhofer Center for Wind Energy Maritime Engineering) find innovative solutions for fulfilling the technical and economic requirements of tripod foundation structures.
LATEST TRENDS IN AIRBORNE POLLUTION SURVEILLANCE
Dr. Nils Robbe and Dr. Theo Hengstermann (Optimare Sensorsysteme AG) examine modern multisensor suites for oil spill remote sensing in conjunction with systems for maritime traffic surveillance.

NOVEMBER

Cover—A U.S. Navy MH-60S multimission helicopter carries the ASQ-235 Airborne Mine Neutralization System (AMNS). Raytheon's AMNS can be deployed from a number of manned and unmanned platforms. Inlayed is a Raytheon AQS-20A, which is capable of detecting, locating and identifying antishipping mines from a safe, stand-off distance. (Photo courtesy of Naval Sea Systems Command.)
Editorial—WORKING TOWARDS AUTONOMOUS DISTRIBUTED SYSTEMS—Andrea Caiti
Soapbox—RENEWABLE OCEAN ENERGY—WHEN WILL THE U.S. WAKE UP—Richard Meyer

EDITORIAL CONTENTS

MINEA: THE ADVANCED MULTI-INFLUENCE EXERCISE MINE SYSTEM
Antonio Molina, Antonio Sánchez-García and F. Javier Rodrigo (Sociedad Anonima de Electronica Submarina) discuss the development and trials of three types of exercise mines with recording, recovery and acoustic link capabilities.
TAKING THE MAN OUT OF THE MINEFIELD
William Taylor, Douglas W. Arent and James A. Normington (Raytheon Integrated Defense Systems) tell how innovative technologies are countering the threat of seaborne mines.
SEA TRIALS OF THE NEW U.S. NAVY SUBMARINE RESCUE SYSTEM
Harald W. Grob walks through the process of sea trials for the pressurized rescue module system.
USING MAGNETIC BARRIERS TO DETECT AN UNDERWATER TERRORIST THREAT
Dr. Jan T. Dobkowski, Dr. Ryszard Cichocki and Franciszek Szarkowski (Research and Development Marine Technology Centre) talk about magnetometric technology, an important player in the refinement of underwater monitoring.
DYNAMIC FOCUSING TECHNIQUES FOR SIDE SCAN SONAR IMAGING
Steven Wright (EdgeTech Marine) explains how dynamically focused technology provides high-resolution imagery at long ranges.
MINE-SWEEP SIMULATOR FOR MCM TRAINING
Mattias Källstrand (Saab Underwater Systems AB) explores a new opportunity to gain tactical advantages in the field from advanced simulation training.
AUTOMATIC TACTICAL PICTURE MANAGEMENT
Dann Laneuville (DCNS) shows how to use target motion analysis and track-to-track correlation to obtain automatic tactical picture management.

DECEMBER

Cover—The deep manned submersible MIR-2 is launched from RV *Akademik Federov* into a narrow hole in the ice at the geographic North Pole. On August 2, the MIR team participated in the first ever dive to the bottom of the ocean at this navigational point. (Photo courtesy of Anatoly M. Sagalevitch.)
Editorial—OCEAN OBSERVING LIKE NEVER BEFORE—Chris Scholin
Soapbox—ENLISTING DEEP-SEA ORGANISMS TO FIGHT CANCERS—Dr. Esther Guzmán

EDITORIAL CONTENTS

UNDER THE ICE DOME AT THE GEOGRAPHIC NORTH POLE
Anatoly M. Sagalevitch (Russian Academy of Sciences) tells how the Russian MIR submersibles made a historic dive to the seafloor at the top of the world.
AN AUTOMATED, FEATURE-BASED FRAMEWORK FOR SEABED MOSAICS
Alessandro Leone, Cosimo Distante and Angela Mastrolia (Institute for Microelectronics and Microsystems) use new computer vision algorithms for image blending at low computational cost with semi-real-time performances.
DEVELOPMENT OF UNMANNED MARITIME VEHICLE STANDARDS
John D. Lambert (Science Applications International Corp.) and Justin E. Manley (Battelle) explain how consensus-based standards enable growth and interoperability in the UMV sector.
OCEANS 2007 MTS/IEEE CONFERENCE AND EXHIBITION
—Conference Report
BARRIER TECHNOLOGY HALTS POTENTIAL MARITIME ATTACKS
Suzanne Finch outlines a port security barrier designed by the U.S. Navy to thwart USS *Cole-type* attacks.
UNDERWATER INTERVENTION INTERNATIONAL CONFERENCE 2008
—Conference Preview
SURFACE IMAGING CAPABILITIES ON MARINE HYDROGRAPHIC VESSELS
Lt. Cmdr. Richard Brennan (National Oceanic and Atmospheric Administration Ship *Rude*), Peter Canter (Applanix Marine Systems) and Jim Van Rens (Riegl USA) investigate the use of videogrammetry and laser scanning technologies on a marine survey vessel.
RADIO-BUOY CONTROL SYSTEM INTEGRATED WITH PLUTO VESSELS
Dr. Aurelio Buonanno (Gaymarine srl) goes step-by-step through the NATO Harbour Protection Trials that demonstrated a new control system's utility in countermine operations.
NSF TO BUILD ICE-CAPABLE VESSEL FOR RESEARCH IN ALASKA WATERS
Dr. Terry E. Whitledge, Dr. Robert Elsner (University of Alaska Fairbanks) and Dirk Kristensen (The Glosten Associates) explore a new design for high-latitude oceanography and fisheries research in the North Pacific Ocean, Bering and Chukchi Seas.
SEA TECHNOLOGY ANNUAL INDEX FOR 2007

2007 Author Index